

METHOD, SYSTEM, AND APPARATUS FOR BINARY TRAVERSAL OF
A TAG POPULATION

ABSTRACT

A method, system, and apparatus for interrogating a radio frequency identification (RFID) tag population are described. Tags are interrogated by a reader. The reader and tags engage in communication according to binary traversal algorithms, where single bit data symbols are exchanged between the reader and tags. Furthermore, a reader implicitly controls the operating state of every tag in the tag population by transmitting a single data symbol. Bit patterns may be collected from the tags by the reader, using a variety of interrogation techniques. In a general interrogation, the reader exchanges symbols with the tag population to interrogate the entire tag population. In a specific interrogation, a reader exchanges symbols with the tag population to target a particular tag identification number. Tags may also be placed in a superposition state by the reader, where they respond whenever a received data symbol matches the next bit of their identification number.

A293-83.doc